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Dunn

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(54) **APPLIANCE RACK WITH HANDLE**

(75) Inventor: **Wesley Owens Dunn**, Mount Juliet, TN (US)

(73) Assignee: **Electrolux Home Products, Inc.**, Cleveland, OH (US)

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(51) **Int. Cl.**
A47F 5/08 (2006.01)

(52) **U.S. Cl.** **211/153**; 211/90.03

(58) **Field of Classification Search** ..... 211/126.15, 211/41.4, 90.01, 134, 90.03, 153, 181.1; D7/409, 323, 388, 402; 126/337 R, 332, 126/337 A, 338, 339
See application file for complete search history.

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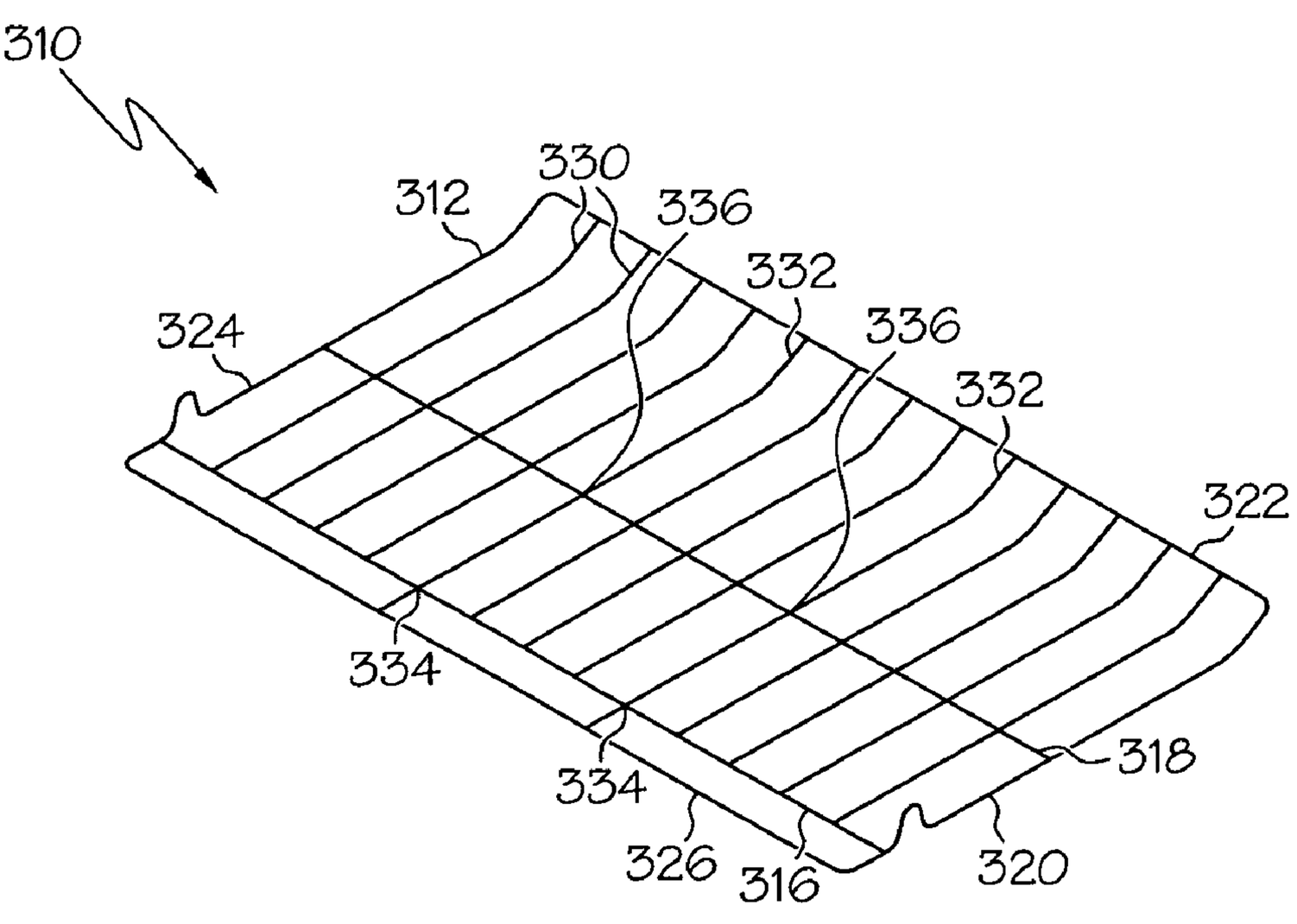
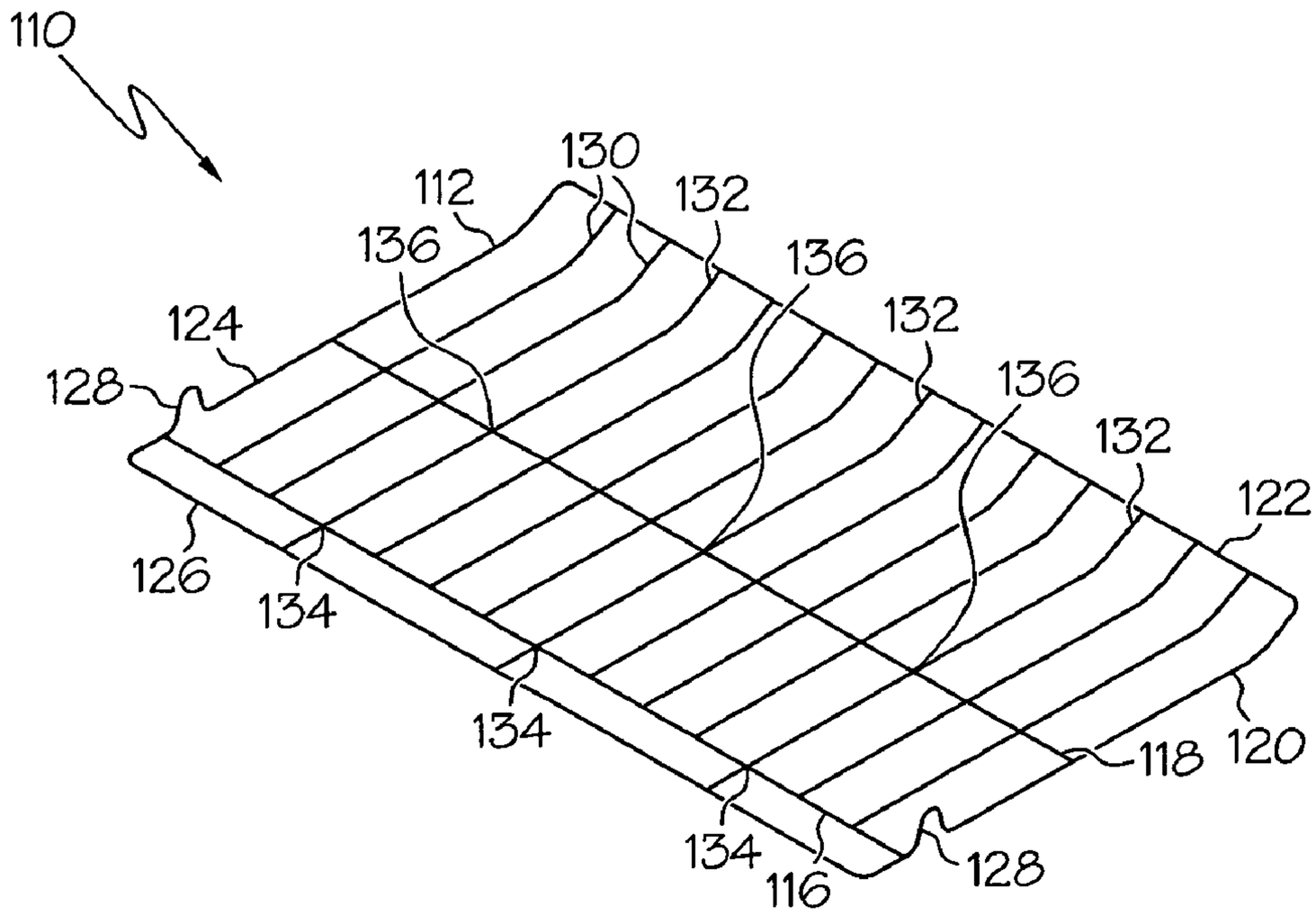
Primary Examiner—Jennifer E. Novosad
(74) *Attorney, Agent, or Firm*—Pearne & Gordon LLP

(57) **ABSTRACT**

A handle rack includes a frame having first and second side edges and front and rear crossbars. A plurality of bar extend between portions of the frame. A handle cross-member is disposed rearwardly of the front crossbar and has a first end secured to the first side edge of the frame and a second end secured to the second side edge of the frame. At least one strengthening bar is provided which has a first portion coupled to the front crossbar and a second portion coupled to the handle cross-member.

20 Claims, 3 Drawing Sheets




110
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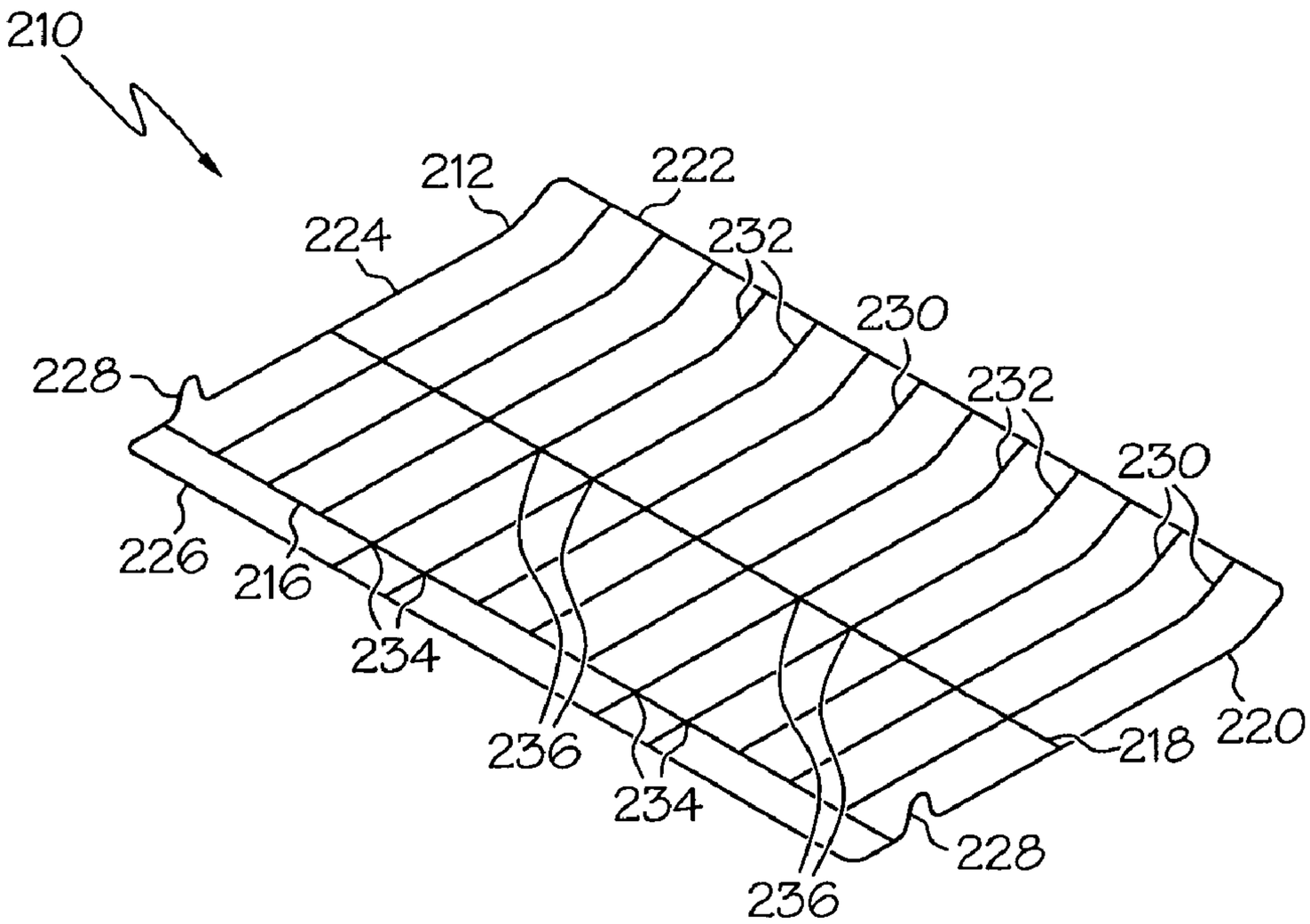
128

FIG. 1


210
212
222
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232
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FIG. 2

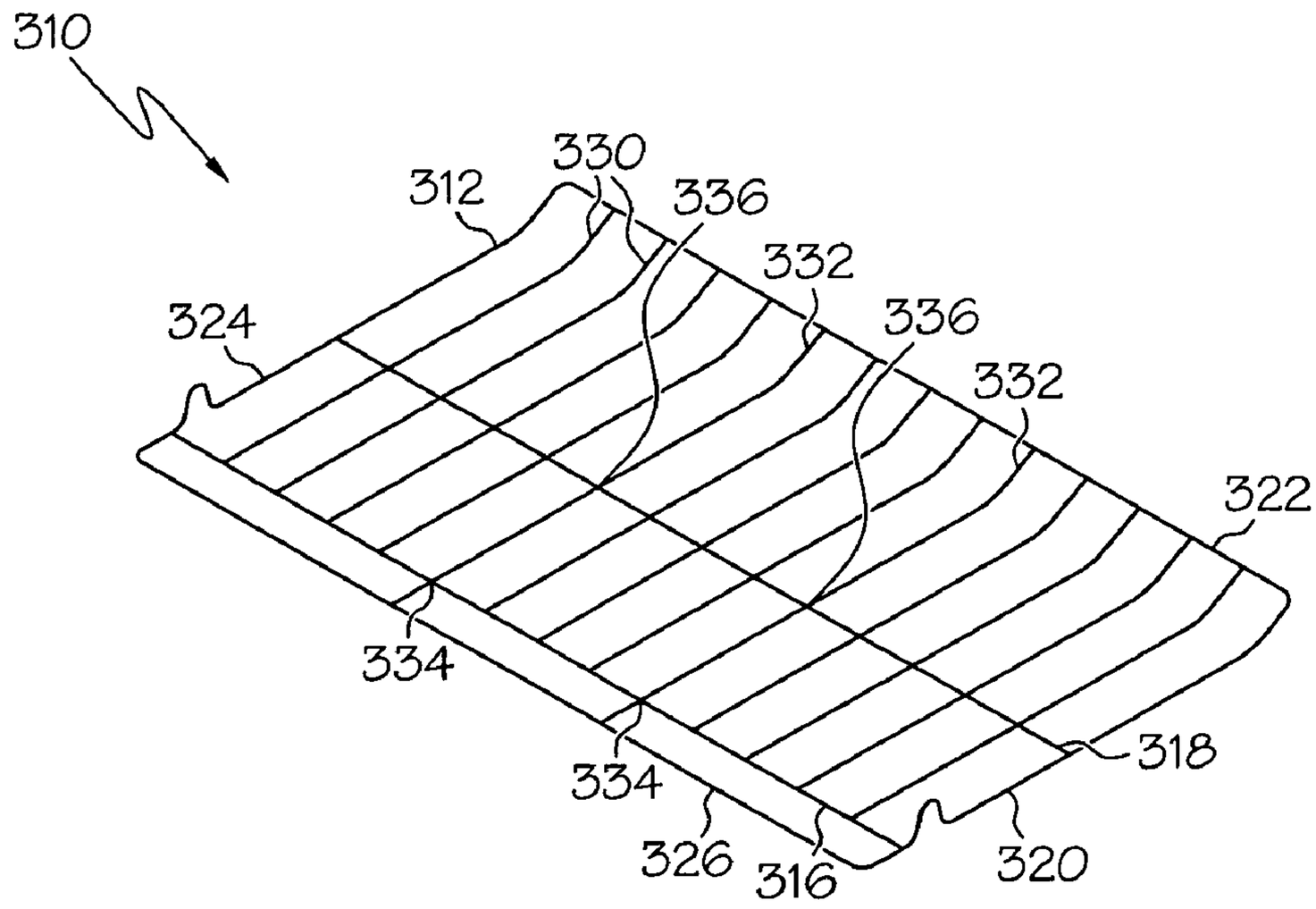
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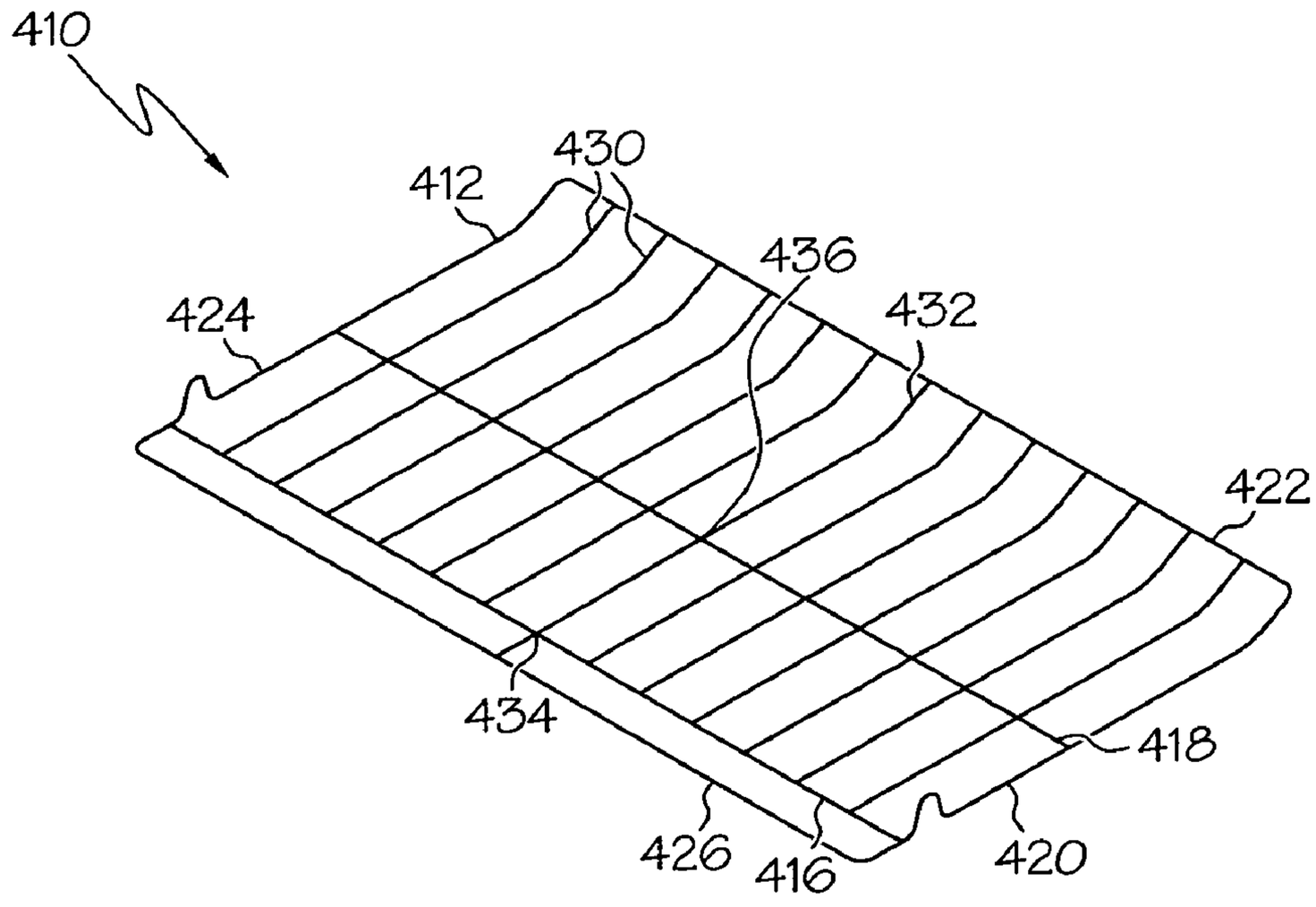
FIG. 3


410
430
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436
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416
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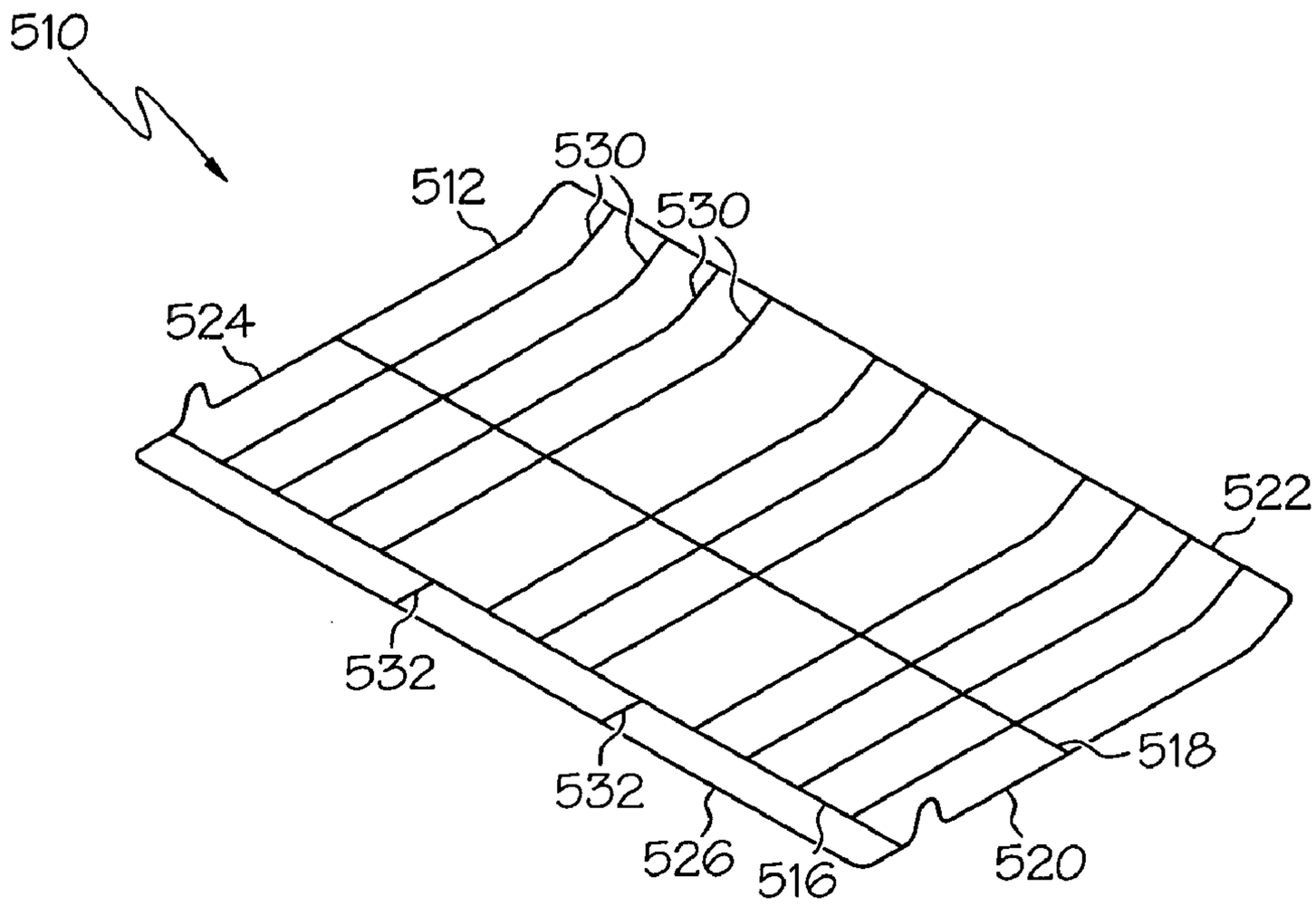
FIG. 4


510
512
530
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524
522
532
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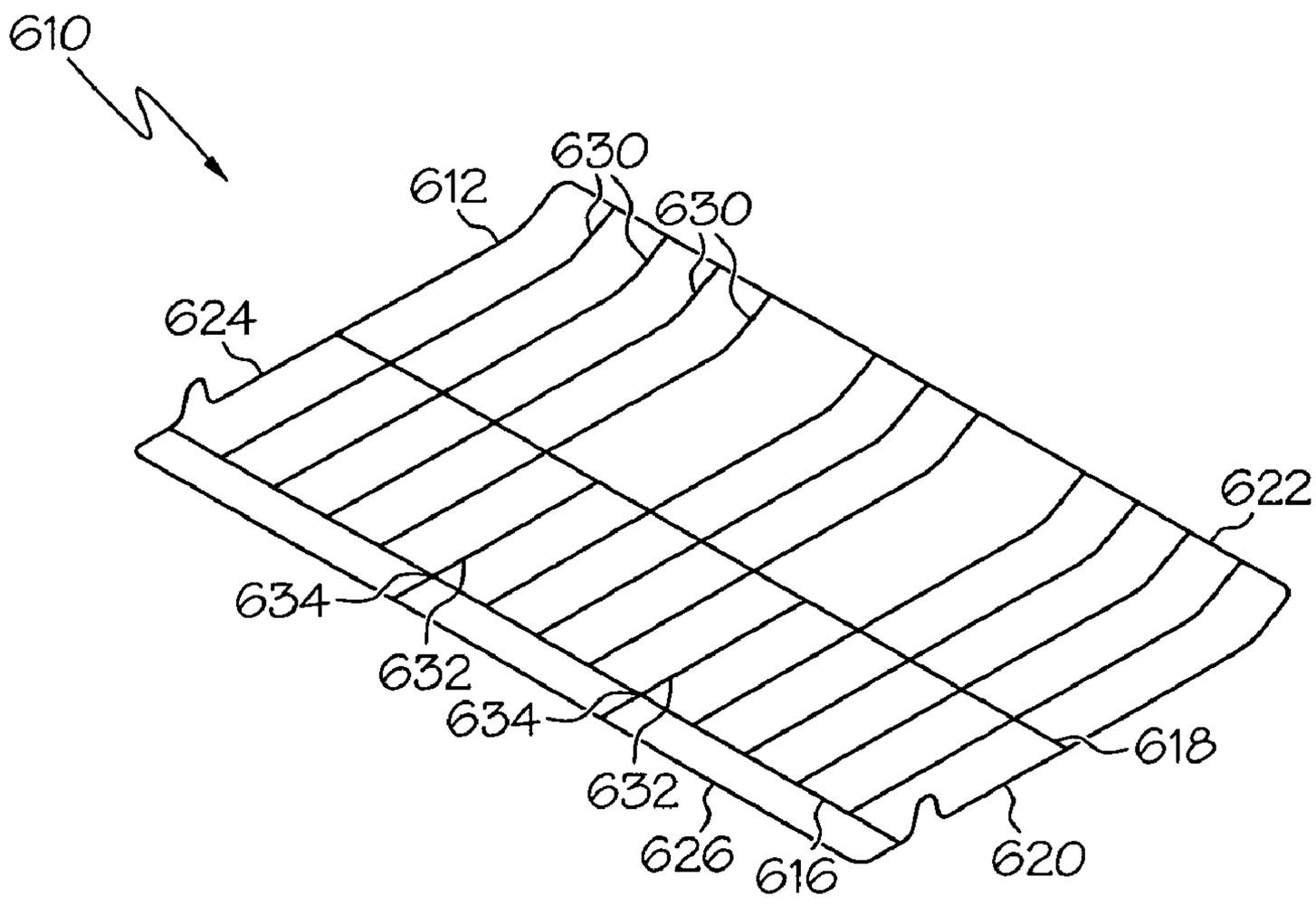
532
526
516
520

FIG. 5


610
630
612
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624
622
634
632
634
618
632
626
616
620

FIG. 6

APPLIANCE RACK WITH HANDLE

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Patent Application No. 60/558,271, filed on Mar. 31, 2004, and entitled BRANDED HANDLE RACK.

BACKGROUND OF THE INVENTION

1) Field of the Invention

The present invention relates to racks for appliances, and more particularly, to a rack having a handle portion.

2) Description of Prior Art

Ovens often have one or more racks generally within the oven. The racks are useful for the placing of cookware, food, and other items, within the oven. The racks place the cookware generally towards the middle of the oven, and keep the cookware away from heating elements and the like. In addition, ovens with multiple racks allow for placement of cookware on a variety of levels within the oven, thereby increasing the total volume of available cooking space.

The racks are often supported by ledges formed along the inner walls of the oven. The racks are then movable in and out of the oven on the ledges. This allows the racks to be removed from the oven for cleaning or for other purposes. Often, the racks may be partially removed from the oven so as to allow easier access to items placed on the racks. The ledges also facilitate vertical adjustment of the racks within the oven cavity.

Oven racks are often of wire form construction. More specifically, an outer wire frame and a support platform, which is constituted by a plurality of fore-to-aft and laterally spaced wires, define a typical oven rack. The wires are substantially evenly spaced across the entire rack for use in supporting food items to be cooked.

BRIEF SUMMARY OF THE INVENTION

The following presents a simplified summary of the invention in order to provide a basic understanding of some aspects of the invention. This summary is not an extensive overview of the invention. It is intended to neither identify key or critical elements of the invention nor delineate the scope of the invention. Its sole purpose is to present some concepts of the invention in a simplified form as a prelude to the more detailed description that is presented later.

In accordance with an aspect of the present invention, a handle rack is provided. The handle rack includes a frame having first and second side edges and front and rear crossbars; a plurality of bars extending between portions of the frame; a handle cross-member disposed rearwardly of the front crossbar and having a first end secured to the first side edge of the frame and a second end secured to the second side edge of the frame; and at least one strengthening bar having a first end secured to the front crossbar and a second end secured to the rear crossbar.

In accordance with another aspect of the present invention, a handle rack is provided which includes: a frame having first and second side edges and front and rear crossbars; a plurality of bars extending between portions of the frame; a handle cross-member disposed rearwardly of the front crossbar having a first end secured to the first side edge of the frame and a second end secured to the second side edge of the frame; and at least one strengthening bar having a first portion coupled to the front crossbar and a second portion coupled to the handle cross-member.

In accordance with yet another aspect of the present invention, a handle rack is provided which includes: a frame having first and second side edges and front and rear crossbars; a plurality of bars extending between portions of the frame; at least one strengthening cross-member having a first end secured to the first side edge of the frame and a second end secured to the second side edge of the frame; a handle cross-member disposed rearwardly of the front crossbar having a first end secured to the first side edge of the frame and a second end secured to the second side edge of the frame; and at least one strengthening bar having a first end secured to the front crossbar and a second end secured to the at least one strengthening cross-member.

The following description and the annexed drawings set forth in detail certain illustrative aspects of the invention. These aspects are indicative, however, of but a few of the various ways in which the principles of the invention may be employed and the present invention is intended to include all such aspects and their equivalents. Other objects, advantages and novel features of the invention will become apparent from the following detailed description of the invention when considered in conjunction with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other features and advantages of the present invention will become apparent to those skilled in the art to which the present invention relates upon reading the following description with reference to the accompanying drawings, in which:

FIG. **1** illustrates a perspective view of an example of a handle rack in accordance with an aspect of the present invention;

FIG. **2** illustrates a perspective view of another example of a handle rack in accordance with an aspect of the present invention;

FIG. **3** illustrates a perspective view of another example of a handle rack in accordance with an aspect of the present invention;

FIG. **4** illustrates a perspective view of another example of a handle rack in accordance with an aspect of the present invention; and

FIG. **5** illustrates a perspective view of another example of a handle rack in accordance with an aspect of the present invention; and

FIG. **6** illustrates a perspective view of another example of a handle rack in accordance with an aspect of the present invention.

DESCRIPTION OF EXAMPLE EMBODIMENTS

The present invention relates to a handle rack for an oven. The present invention will now be described with reference to the drawings, wherein like reference numerals are used to refer to like elements throughout. It is to be appreciated that the various drawings are not necessarily drawn to scale from one figure to another nor inside a given figure, and in particular that the size of the components are arbitrarily drawn for facilitating the understanding of the drawings. In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It may be evident, however, that the present invention may be practiced without these specific details.

Referring initially to FIG. **1**, an example of a handle rack **110** for an oven is illustrated in accordance with an aspect of the present invention. The handle rack **110** includes a frame **112**, a plurality of bars **130**, **132**, a handle cross-member **116**, and one or more optional strengthening cross-members **118**. The frame **112**, bars **130**, **132**, and cross-member(s) **116**, **118** can be manufactured from steel or any other suitable material which provides adequate strength to support items such as cake pans, pizza stones and casseroles and withstands the heat of an oven. The handle rack **110** can be formed by bending a continuous wire into a substantially rectangular shape to form the frame **112**. The frame **112** comprises a first side edge **120**, a rear crossbar **122**, a second side edge **124**, and a front crossbar **126**. The first and second side edges **120**, **124** have an upward-facing projection **128** integrally formed in the wire frame of the handle rack **110** to facilitate alignment of the rack within an oven (not shown). For instance, a standard rack location in an oven includes a top guide rail and a bottom guide rail. The top guide rail includes a downward-facing projection and the bottom guide rail includes a corresponding downward-facing groove portion. Specifically, the upward-facing portion **128** of the handle rack **110** is adapted to contact the downward-facing projection of the top guide rail such that a stop is created to properly align the oven rack **110** with respect to the top and bottom guide rails.

The plurality of bars are also formed from wire and include a plurality of support bars **130** of a first length and one or more strengthening bars **132** of a second length. In particular, the support bars **130** have a length that extends between the rear crossbar **122** of the frame **112** and the handle cross-member **116** such that the support bars **130** each have a first end welded, or otherwise secured, to the rear crossbar **122** and a second end welded, or otherwise secured, to the handle cross-member **116**. The strengthening bar(s) **132** has a length that extends between the rear crossbar **122** of the frame **112** and the front crossbar **126** of the frame **112** such that the strengthening bar(s) **132** has a first end welded, or otherwise secured, to the rear crossbar **122** and a second end welded, or otherwise secured, to the front crossbar **126**. The strengthening bar(s) **132** can also be welded to the handle cross-member **116** and strengthening cross-member(s) **118** at corresponding mating points **134**, **136**. The strengthening bar(s) **132** operates to mitigate sagging of the central rack portion with respect to the front crossbar **126** when heavy food or cookware is placed on the rack **110**. Sagging of the central portion of the rack **110** presents problems with easily sliding the food or cookware from the rack **110** without interference from the front crossbar **126**.

In the present example, three strengthening bars **132** extend between the rear crossbar **122** and the front crossbar **126** and are spaced substantially equidistant from one another and substantially parallel with the first and second side edges **120** and **124**. The gap between the handle cross-member **116** and the front crossbar **126** creates a handle portion to facilitate pulling out and/or removing the rack **110** from an oven. The handle portion extends across an entire length of the rack **110** such that when the rack **110** is in use, at least a portion of the handle is always exposed. For instance, if a cookie sheet is placed at a center portion of the rack **110**, the cookie sheet will likely cover a central portion of the rack **110**. Accordingly, because the length of handle portion extends across the entire length of the rack **110**, a user can grab the handle from either or both end portions of the rack **110**. The three strengthening bars **132** also act to define a plurality of grasping areas.

The handle cross-member **116** and the strengthening cross-member(s) **118** are also formed of wire and have a first end welded, or otherwise secured, to the first side edge **120** of the frame **112** and a second end welded, or otherwise secured, to the second side edge **124** of the frame **112**. The handle cross-member **116** is disposed rearwardly of and positioned substantially parallel with the front crossbar **126** and is spaced from the front crossbar **126** at a distance such that a user can comfortably grasp the front crossbar **126** to pull the rack **110** from the oven. Thus, the front crossbar **126** acts as a handle for the rack **110**. The strengthening cross-member(s) **118** is also positioned substantially parallel with the front crossbar **126** and acts to increase the strength of the handle rack **110**. The wires can be coated with a glass material, such as porcelain, or any other suitable material operable to protect the handle rack **110** from discoloration and the like due to heating of the wire at high temperatures.

FIGS. **2-6** illustrate various configurations of handle racks **210**, **310**, **410**, **510**, and **610**, respectively, in accordance with aspects of the present invention. The handle racks **210**, **310**, **410**, **510**, and **610** comprise the same basic configuration as the handle rack **110** shown in FIG. **1**. In this respect, components of the handle racks **210**, **310**, **410**, **510**, and **610** that are analogous with the components of the handle rack **110** are referenced with corresponding reference numerals. For example, the substantially rectangular frame **112** of FIG. **1** is analogous with substantially rectangular frames **212**, **312**, **412**, **512**, and **612** of FIGS. **2**, **3**, **4**, **5**, and **6**, respectively. For the sake of brevity, these analogous components will only be discussed with regard to any additional detail, or any differences from the previously discussed handle rack **110** shown in FIG. **1**.

Turning now to FIG. **2**, a handle rack **210** is shown having four strengthening bars **232** extending between the rear crossbar **222** and the front crossbar **226** and spaced to define three grasping areas. FIG. **3** illustrates a handle rack **310** having two strengthening bars **332** extending between the rear crossbar **322** and the front crossbar **326** to define three grasping areas. FIG. **4** illustrates a handle rack **410** having one strengthening bar **432** extending between the rear cross bar **422** and the front crossbar **426** to define two grasping areas.

It is to be appreciated that a handle rack having any suitable number of strengthening bars spaced apart to define any suitable number of grasping areas is contemplated as falling within the scope of the present invention. Further, it is to be appreciated that the handle rack can have any suitable configuration such that the handle portion includes at least two defined grasping areas, which together, extend across an entire length of the rack so that when the rack is in use, at least a portion of the handle is always exposed

Turning now to FIG. **5**, a handle rack **510** having an alternative configuration of strengthening bars **532** is illustrated in accordance with an aspect of the present invention. In particular, the handle rack **510** includes one or more strengthening bars **532** that extend between the handle cross-member **516** and the front crossbar **526** such that a first end of the strengthening bar(s) **532** is welded, or otherwise secured, to the handle cross-member **516** and a second end of the strengthening bar(s) **532** is welded, or otherwise secured, to the front crossbar **526**. Although, the handle rack **510** illustrates two strengthening bars **532**, the handle rack **510** can include any suitable number of strengthening bars **532** positioned at any suitable location between the handle cross-member **516** and front crossbar **526** to define a plurality of grasping areas along the handle portion.

FIG. **6** illustrates yet another example of a handle rack **610** having an alternative configuration of strengthening bars **632** in accordance with an aspect of the present invention. The handle rack **610** includes one or more of the strengthening bars **632** that extend between one or more strengthening

cross-members **618** and the front crossbar **626** such that a first end of the strengthening bar(s) **632** is welded, or otherwise secured, to the cross-member **618** and a second end of the strengthening bar(s) **632** is welded, or otherwise secured, to the front crossbar **626**. The strengthening bar(s) **632** can also be welded to the handle cross-member **616** at corresponding mating points **634**. Again, although, the handle rack **610** illustrates two strengthening bars **632**, the handle rack **610** can include any suitable number of strengthening bars **632** positioned at any suitable location between the cross-member **618** and front crossbar **626** to define a plurality of grasping areas along the handle portion.

It is to be appreciated that the racks of the subject invention can be used in settings other than in an oven. For example, the racks of the subject invention could be used in a refrigerator and/or freezer unit. Further, it is to be appreciated that the racks can be constructed of any suitable material, such as metal, plastic, and the like. Further still, the frame, the bars, and the cross-member(s) need not be constructed from the same materials.

The size of the frame of the rack of the subject invention also depends upon the intended use of the rack. In the exemplified embodiment, the rack is sized to slide into or replace a rack of a conventional oven. Likewise, the bars are spaced to accommodate cookware. The frame can be made larger to fit commercial ovens or sized to fit any apparatus in which the racks are to be used. The bars of the rack can be spaced appropriately within the frame to hold any designated item.

The handles on the rack of the subject invention can be made from the same material as the rack. For example, the handles can be fashioned from steel bars that are welded (e.g., spot welded) to the frame. Alternatively, the handles can be made of an insulated material to protect someone grasping the handle from burns. Suitable insulating materials include ceramics, which can likewise be applied to the handle to provide insulation qualities.

The invention has been described hereinabove using specific examples; however, it will be understood by those skilled in the art that various alternatives may be used and equivalents may be substituted for elements or steps described herein, without deviating from the scope of the invention. Modifications may be necessary to adapt the invention to a particular situation or to particular needs without departing from the scope of the invention. It is intended that the invention not be limited to the particular implementation described herein, but that the claims be given their broadest interpretation to cover all embodiments, literal or equivalent, covered thereby.

What is claimed is:

1. A rack for an appliance comprising;

a frame defined by a first outermost frame member, a second outermost frame member opposite the first outermost frame member, a frontmost crossbar, and a rearmost crossbar;

a plurality of bars extending between portions of the frame;

a handle cross-member disposed rearwardly of the frontmost crossbar so that the handle cross-member and the frontmost crossbar define a grasping portion for a user, the handle cross-member having a first end secured to the first outermost frame member of the frame and a second end secured to the second outermost frame member of the frame; and

at least one strengthening bar having a first end secured to the frontmost crossbar and a second end secured to the rearmost crossbar,

wherein the plurality of bars are oriented in a direction substantially parallel with the at least one strengthening bar, and wherein the plurality of bars and the at least one strengthening bar are of different lengths, and

wherein each of the plurality of bars has a first end secured to the rearmost crossbar and a second end secured to the handle cross-member.

2. The rack of claim **1**, wherein the frame, the plurality of bars, the handle cross-member and the at least one strengthening bar are formed of wire.

3. The rack of claim **1**, wherein the handle cross-member is oriented in a direction substantially parallel with the front crossbar.

4. The rack of claim **1**, wherein a distance between the frontmost crossbar and the handle cross-member creates a gap that facilitates pulling out and removing of the rack from an appliance.

5. The rack of claim **1**, wherein at least two strengthening bars are provided between the rearmost and frontmost crossbars to define at least three handle grasping areas between the handle cross-member and the frontmost crossbar.

6. The rack of claim **1**, wherein each of the first outermost frame member and the second outermost frame member includes an upward facing projection to facilitate alignment of the rack within an oven.

7. A rack for an appliance comprising;

a frame defined by a first outermost frame member, a second outermost frame member opposite the first outermost frame member, a frontmost crossbar, and a rearmost crossbar;

a plurality of bars extending between portions of the frame;

a handle cross-member disposed rearwardly of the frontmost crossbar having a first end secured to the first outermost frame member of the frame and a second end secured to the second outermost frame member of the frame; and

at least one strengthening bar having a first portion coupled to the frontmost crossbar and a second portion coupled to the handle cross-member,

wherein the plurality of bars each include a first end secured to the rearmost crossbar of the frame and a second end secured to the handle cross-member and

wherein the at least one strengthening bar is secured to the frontmost crossbar at a first end of the at least one strengthening bar and to the handle cross-member at a second end of the at least one strengthening bar.

8. The rack of claim **7**, wherein a distance between the frontmost crossbar and the handle cross-member creates a gap that facilitates pulling out and removing of the rack from an appliance.

9. The rack of claim **7**, further comprising at least one strengthening cross member provided between the rearmost crossbar of the frame and the handle cross-member.

10. The rack of claim **9**, wherein the at least one strengthening bar has a third portion coupled to that at least one strengthening cross-member.

11. The rack of claim **7**, wherein the at least one strengthening bar has a third portion coupled to the rearmost crossbar of the frame.

12. The rack of claim **7**, wherein each of the first outermost frame member and the second outermost frame member includes an upward facing projection to facilitate alignment of the rack within an oven.

13. A rack for an appliance comprising;

a frame defined by a first outermost frame member, a second outermost frame member opposite the first outermost frame member, a frontmost crossbar, and a rearmost crossbar;

a plurality of bars extending between portions of the frame;

at least one strengthening cross-member having a first end secured to the first outermost frame member of the frame and a second end secured to the second outermost frame member of the frame;

a handle cross-member disposed rearwardly of the frontmost crossbar and forwardly of the at least one strengthening cross-member, the handle cross-member having a first end secured to the first outermost frame member of the frame and a second end secured to the second outermost frame member of the frame; and

at least one strengthening bar having a first portion secured to the frontmost crossbar and a second portion secured to the at least one strengthening cross-member,

wherein the plurality of bars each have a first end secured to the rearmost crossbar of the frame and a second end secured to the handle cross-member.

14. The rack of claim **13**, wherein the plurality of bars are substantially parallel with the at least one strengthening bar and wherein the plurality of bars each have a length that is longer than the at least one strengthening bar.

15. The rack of claim **13**, wherein the plurality of bars are substantially parallel with the at least one strengthening bar and wherein the plurality of bars each have a length that is shorter than the at least one strengthening bar.

16. The rack of claim **13**, wherein the at least one strengthening bar defines at least two handle grasping areas between the frontmost crossbar of the frame and the handle cross-member.

17. The rack of claim **13**, wherein the at least one strengthening bar is secured to the frontmost crossbar at a first end of the at least one strengthening bar and to the at least one strengthening cross-member at a second end of the at least one strengthening bar.

18. The rack of claim **13**, wherein each of the first outermost frame member and the second outermost frame member includes an upward facing projection to facilitate alignment of the rack within an oven.

19. A rack for an appliance comprising;

a frame defined by a first outermost frame member, a second outermost frame member opposite the first outermost frame member, a frontmost crossbar, and a rearmost crossbar;

a plurality of bars extending between portions of the frame;

a handle cross-member disposed rearwardly of the frontmost crossbar having a first end secured to the first outermost frame member of the frame and a second end secured to the second outermost frame member of the frame;

at least one strengthening bar having a first portion coupled to the frontmost crossbar and a second portion coupled to the handle cross-member; and

at least one strengthening cross member provided between the rearmost crossbar of the frame and the handle cross-member,

wherein the plurality of bars each include a first end secured to the rearmost crossbar of the frame and a second end secured to the handle cross-member.

20. The rack of claim **19**, wherein the at least one strengthening bar has a third portion coupled to the at least one strengthening cross-member.

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